

Notice of Allowability

Application No.

09/996,116

Examiner

Jason M. Perilla

Applicant(s)

SIMMONS ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed June 30, 2005.
2. ☒ The allowed claim(s) is/are claims 1-8, and 10-24 renumbered respectively as claims 1-23.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20050916.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. Claims 1-24 are pending in the instant application.
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David B. Cochran (39,142) on September 15, 2005.

The application has been amended as follows wherein claim 9 is cancelled and the following versions of claims 1, 6, 12, 16-18, 20, 22, and 23 replace all prior versions in their entirety:

1. A system for detecting a synchronization (sync) signal in a received communication signal, comprising:
 - a memory configured to store consecutive portions of a the received communication signal; and
 - a sync signal detector configured to read the stored consecutive portions of the received communication signal from the memory, monitor the read stored consecutive portions of the received signal to detect the sync signal, and determine whether or not the detected sync signal ~~detected~~ in the read stored consecutive portions of the received communications signal is invalid, wherein the sync signal detector reads from the memory and monitors previously read and monitored stored consecutive portions of the received communications signal occurring after the detected sync signal ~~from the memory~~ when the detected sync signal is invalid to detect as the sync signal a valid sync signal.
6. The system of claim 2, wherein:

the received communication signal comprises a plurality of frames; and
the sync signal is a frame synchronization signal.

9. CANCELLED ~~The system of claim 1, wherein the sync signal detector monitors the read stored consecutive portions of the received communications signal to detect the sync signal by correlating the read stored consecutive portions of the received communications signal with the sync signal.~~

12. A method for detecting a synchronization (sync) signal in a received communication signal, comprising the steps of:

storing consecutive portions of a the received communication signal in a memory;

reading the stored consecutive portions of the received communication signal from the memory;

monitoring the read stored consecutive portions of the received signal to detect the sync signal;

determining whether or not the detected sync signal detected in the read stored consecutive portions of the received communications signal is invalid; and

if the detected sync signal is invalid, then repeating the steps of reading and monitoring for previously read and monitored stored consecutive portions of the received communications signal occurring after the detected sync signal to detect as the sync signal a valid sync signal.

16. The method of claim 15, wherein:

the received communication signal is an analog signal; and

the stored each consecutive portions of the received communication signal is are a digital samples representative of the received communication signal;

the sync signal has a length of k samples; and

~~the steps of reading and monitoring are repeated for $(k-1)$ previously read samples.~~

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17. A system for detecting a synchronization (sync) signal in a received communication signal, comprising:

means for storing consecutive portions of a the received communication signal; and

means for detecting the sync signal, by reading the stored consecutive portions of the received communication signal from the means for storing, monitoring the read stored consecutive portions of the received communications signal to detect the sync signal, and determining whether or not the detected sync signal ~~detected~~ in the read stored consecutive portions of the received communications signal is invalid, wherein the means for detecting reads from the memory and monitors previously read and monitored stored consecutive portions of the received signal occurring after the detected sync signal ~~from the means for storing~~ when the detected sync signal is invalid to detect as the sync signal a valid sync signal.

18. A computer readable medium containing instructions for implementing a method for detecting a synchronization (sync) signal in a received communication signal, the method comprising the steps of:

storing consecutive portions of a the received communication signal in a memory;

reading the stored consecutive portions of the received communication signal from the memory;

monitoring the read stored consecutive portions of the received signal to detect the sync signal;

determining whether or not the detected sync signal ~~detected~~ in the read stored consecutive portions of the received communications signal is invalid; and

if the detected sync signal is invalid, then repeating the steps of reading and monitoring for previously read and monitored stored consecutive portions of the received communications signal occurring after the detected sync signal to detect as the sync signal a valid sync signal.

20. A wireless communication device comprising:

a transceiver configured to transmit and receive communication signals;
and
a digital signal processor (DSP) operatively coupled to the transceiver,
the DSP comprising computer software code for detecting a synchronization
(sync) signal in a received communication signal, by performing the functions of:
storing consecutive portions of a the received communication signal in a
memory;
reading the stored consecutive portions of the received communication
signal from the memory;
monitoring the read stored consecutive portions of the received signal to
detect the sync signal;
determining whether or not the detected sync signal detected in the read
stored consecutive portions of the received communications signal is invalid; and
if the detected sync signal is invalid, then repeating the steps of reading
and monitoring for previously read and monitored stored consecutive portions of
the received communications signal occurring after the detected sync signal to
detect as the sync signal a valid sync signal.

22. The device of claim 20, wherein:

the transceiver comprises a communication signal receiver;
the receiver has two modes of operation, the two modes of operation
comprising a sync signal search mode in which the computer software code for
detecting a sync signal is executed and a signal decode mode in which a
received signal is processed; and
the receiver remains in the sync signal search mode until the sync signal
is detected, enters the decode mode when the sync signal is detected, and
reverts to the sync signal search mode if the detected sync signal is determined
to be invalid.

23. The device of claim 22, wherein the receiver reverts to the sync signal
search mode from the decode mode when a predetermined portion of a the
received communications signal has been processed.

Claims 1-8, and 10-24 are renumbered respectively as claims 1-23, and the claim dependency is renumbered accordingly.

Allowable Subject Matter

3. Claims 1-8, and 10-24 renumbered respectively as claims 1-23 are allowed.
4. The following is a statement of reasons for allowance:

Claims 1-8, and 10-24 renumbered respectively as claims 1-23 are allowed because the prior art of record does not anticipate or obviate the claimed subject matter including re-reading stored consecutive portions of received data in the condition that a false synchronization is detected. The prior art of record discloses the detection of a possible false synchronization, but does not re-read the data which had occurred before the false synchronization is detected.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following prior art of record not relied upon above is cited to further show the state of the art with respect to synchronizers.

U.S. Pat. No. 6587527 to Tani et al.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone

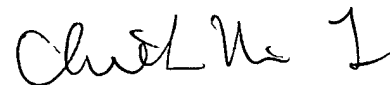
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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Perilla
September 16, 2005

jmp


CHIEH M. FAN
PRIMARY EXAMINER